Section 60 — The FUNt Universal Harmonic Alignment Law (UHAL) & The Harmonic Return

Section 60 closes the FUNt harmonic ladder. It defines how alignment is measured and when a full cycle is truly complete.

60.1 Definition of the Universal Harmonic Alignment Law (UHAL)

We define the harmonic alignment amplitude A_H as:

$$A_H = (C_\varphi \times \tau_{alignment}) / (\Delta\Phi + \Delta\tau)$$

where:

- C_φ = field coherence at the relevant scale
- $\tau_{alignment}$ = alignment torsion (how strongly the system is "pulled" into phase)
- $\Delta\Phi$ = residual phase error across the cycle
- $\Delta\tau$ = residual torsion mismatch across the cycle

Interpretation.

High C_φ and strong $\tau_{alignment}$ increase A_H. Large residual errors ($\Delta\Phi$, $\Delta\tau$) decrease A_H. A system is harmonically aligned when A_H is high and stable across time and scale. UHAL is the metric that tells us how close a system is to perfect harmonic alignment.

60.2 The Harmonic Return Condition

The FUNt cycle is not complete when A_H is merely large. A full harmonic return requires that alignment be achieved and the system successfully passes four closure tests:

A cycle closes when memory is intact (RPM), structure is strengthened (CPA), drift is corrected (HDC), scale coherence is achieved (MSE), and phase returns to 0°.

These four checks can be thought of as the return gatekeepers:

- RPM — Memory is intact: The system preserves a stable record of its prior state(s) across the cycle.
- CPA — Structure is strengthened: The cycle leaves the structure more robust, not degraded or randomized.
- HDC — Drift is corrected: Any accumulated drift in phase, curvature, or alignment is actively pulled back toward center.
- MSE — Scale coherence is achieved: Local and global scales resonate consistently; no scale is left "out of tune."
- Phase → 0°: The net phase error of the cycle returns to zero, closing the loop in alignment with the original reference.

Only when UHAL is satisfied and all four return conditions are met do we say that the cycle 1–60 is complete: the system has achieved a true Harmonic Return.

60.3 Summary

- UHAL gives the quantitative measure of harmonic alignment: $A_H = (C_\varphi \times \tau_{alignment}) / (\Delta\Phi + \Delta\tau)$.
- The Harmonic Return entry specifies when the FUNt cycle has truly closed: memory preserved (RPM), structure strengthened (CPA), drift corrected (HDC), multi-scale coherence achieved (MSE), and net phase returned to 0°.
- Together, these two pieces are Section 60: the law of alignment and the condition of return, completing the FUNt harmonic ladder.